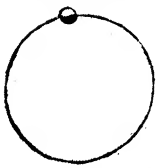
Solem, debili quadam luce, idque ſub tota fere emerſione, in hunc fere modum.



Sive illa in margine Veneris apparens, inflectioni radiorum Solis, ſive refractioni in atmoſphæra Veneris, ſit tribuenda, diſquirant alii.

XXXIX. *An Account of the Obſervations made on the ſame Tranſit in* Sweden: *In a Letter from Mr.* Peter Wargentin, *Secretary to the Royal Academy of Sciences in* Sweden, *and F. R. S. to Mr.* John Ellicot, *F. R. S. Tranſlated from the* French.

SIR, Stockholm, Aug. 7, 1761.

Read Nov 12, 1761. IN a letter, dated June 8th, I communicated to Dr. Birch, Secretary to the Royal Society, my obſervations upon the tranſit of Venus. Having ſince received ſome other good obſervations of this phænomenon, I thought the communicating them to you, would give you ſome pleaſure.

At Torneo in Lapland, Meſſieurs Lagerborn and Hellant very happily obſerved both the entrance and exit of Venus, with teleſcopes of 32 and 20 feet focal lengths. The principal times obſerved were as follows:

Exterior

	Exterior contact at the entrance.			Interior contact at the entrance.			Interior contact at the exit.			Total exit.		
	h	′	″	h	′	″	h	′	″	h	′	″
Lagerborn	3	45	44	4	4	1	9	54	22	10	12	18
Hellant	3	45	51	4	3	59	9	54	8	10	12	22

Mr. Hellant is eſteemed a very good obſerver. The difference between the meridians of Paris and Torneo, is computed to be 1^h 27′ 28″, very nearly.

At Abo, the capital of Finland, ſituated in latitude 60° 27′, longitude eaſt of Paris 1^h 19′ 17″, Mr. Juſtander obſerved with a teleſcope of 20 feet;

	h	′	″
The interior contact, at the entrance to be at	3	55	50
Beginning of the exit, at - - - - - -	9	46	59
Total emerſion, at - - - - - - -	10	4	42

At Hernoſand, a city in Sweden, in latitude 60° 38′, and longitude 1^h 2′ 12″ eaſt of the meridian of Paris, Meſſieurs Giſter and Strom obſerved, with teleſcopes of 20 feet.

	h	′	″	h	′	″	h	′	″	h	′	″
Mr. Giſter - - - -				3	38	26	9	29	21	9	46	40
Mr. Strom	3	20	40	3	38	35	-	-	- -	9	46	47

At the obſervatory at Upſal, Meſſieurs Strömer, Metlander Mallet, and Bergman, made the following obſervations, with three teleſcopes of 20 feet, and a reflector of 18 inches. The difference of meridians between Upſal and Paris is 1^h 1′ 10″.

Mr.

	h	′	″	h	′	″	h	′	″	h	′	″
Mr. Mallet	3	20	45	3	37	56	9	28	3	9	46	29
Mr. Strömer	-	-	-	3	38	5	9	28	7	9	46	13
Mr. Bergman	-	-	-	3	37	43	9	28	9	9	46	30

At Lund in Scanie, Mr. Schenmark obſerved, with a teleſcope of 21 feet, The interior contact of the exit was 9^h 10′ 44″, doubtful, being cloudy; total emerſion 9^h 29′ 14″. This city is 43′ 50″ to the eaſt of the meridian of Paris.

According to the obeſervations made at the obſervatory at Stockholm, by Mr. Klingenſtierna and myſelf;

	h	′	″	h	′	″	h	′	″	h	′	″
Mr. Klingenſtierna	-	-	-	3	39	29	9	30	11	9	48	8
Mine	-	-	3 21 37	3	39	23	9	30	8	9	48	9

The difference of meridians between Paris and Stockhom is 1^h 2′ 50″ or 52″, at moſt.

In theſe obſervations, I made uſe of an excellent teleſcope, of 21 Swediſh feet, and Mr. Klingenſtierna obſerved with one of Mr. Dollond's teleſcopes, of 10 feet, with an eye-glaſs fitted to it, which magnified the object more than 140 times.

In comparing theſe obſervations together, you will perceive, that they do not agree ſo near as was hoped for; and thoſe which were made at Paris, agree but little better. I ſhould be very glad to hear how the Engliſh obſervers have ſucceeded, both at London, and at St. Helena; I therefore deſire you would procure for me thoſe obſervations, which have been communicated to the Royal Society, to whom you may

preſent

preſent theſe from Sweden, if you think them deſerving your notice, which I hope you will.

I have the honour to be,

With the moſt perfect eſteem,

SIR,

Your moſt obedient

humble ſervant,

Wargentin.

XL. *Obſervationes* Veneris *ſub* Sole *viſæ, habitæ* Pariſiis, *die* 6ª Junii 1761, *in palatio* Luxemburgi, *quas Regiæ Societati* Londinenſi, *venerationis ſuæ obſequium, offert* Hieronymus De la Lande, *Acad. Reg. Scient.* Pariſinæ *Socius, Regiuſque Matheſeos Profeſſor.*

Read Nov. 19, 1761.

NUbes in oriente perſiſtentes ab horâ quartâ uſque ad ſeptimam viſum Solis rapuerunt, earumque intervalla unicam obſervationem permiſerunt, quæ ſequitur, cum ſextante hexapedali factam.

Temp.